

7318

CORRES CONTROL
INCOMING LTR NO

1773 RF 93

DUE
DATE

ACTION

DIST	LTR	ENC
BENEDETTI, R L	X	X
BENJAMIN, A		
BERMAN, H S		
CARNIVAL, G J		
COPP, R D		
CORDOVA, R C		
DAVIS, J G		
FERRERA, D W		
HANNI, B J		
HEALY, T J		
HEDAH, T G		
HILBIG, J G		
KIRBY, W A		
KUESTER, A W		
LEE, E M		
MANN, H P		
MARX, G E		
MCKENNA, F G		
MORGAN, R V		
PIZZUTO, V M		
POTTER, G L		
RILEY, J H		
SANDLIN, N B		
SATTERWHITE, D G		
SCHUBERT, A L		
SETLOCK, G H		
SREPLER, R L		
SULLIVAN, M T		
SWANSON, E R		
WILKINSON, R B		
WILSON, J M		
ZANE, J O		

DeMass T X X

mohyl K X X

mende F X X

ward D X X

Taylor K X X

CORRES CONTROL	x	x

Reviewed for Addressee
Corres Control RFP4-15-93
DATE

BY

Ref Ltr #

Department of Energy

ROCKY FLATS OFFICE
P O BOX 928
GOLDEN COLORADO 80402-0928

APR - 4 93

93-DOE-04083

Mr. Gary Baughman
Unit Leader
Hazardous Waste Facilities
Colorado Department of Health
4300 Cherry Creek Dr S.
Denver CO 80222-1530

Mr Martin Hestmark
Rocky Flats Project Manager
U S Environmental Protection Agency
Region VIII
999 18th Street
Suite 500
Denver, CO 80202-2466

Gentlemen

As agreed upon and discussed with representatives from your agencies, the Department of Energy/Rocky Flats Office (DOE/RFO) is hereby transmitting a draft Interim Pond Water Management Plan for operation of the A-series ponds, B-series ponds, Pond C-2, and the Landfill Pond during the time period before the possible implementation of the Pond Water Management Interim Measure/Interim Remedial Action (IM/IRA)

A summary of historical maximum constituent values from the Landfill Pond is presented in Table I to identify possible contaminants of concern. Identified contaminants of concern that have previously been noted in analyses of samples from the other ponds are summarized in Table II. We believe the list of analyses cited for sampling and testing before transfer or spray evaporation at the interior ponds are good indicator parameters to validate that the water in those ponds meets Segment 5 standards. As cited in your correspondence from March 3, 1993, concerning pond water management, Land Disposal Restriction (LDR) standards will not be used to determine if the pond water "contains" hazardous waste. Because the operational guidance for the interior ponds deals with the water either being transferred or spray evaporated within Segment 5 (which does not feed into a drinking water supply), we believe that compliance with Segment 5 standards demonstrates that the water does not "contain" hazardous waste. The current Segment 5, Segment 4, and LDR standards are listed in Table III for comparison. Additionally, the risk assessments for the constituents of concern detected in the pond waters will be incorporated in the proposed IM/IRA.

ROCKY FLATS PLANT
CONFIDENTIAL

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A-01106-000223

Messrs Baughman and Hestmark
93-DOE-4083

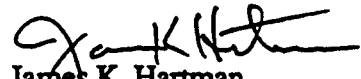
2

APR 14 1993

Because we anticipate initiating pond transfers or spray evaporation during the late spring and early summer, we would appreciate receiving any comments or questions you have regarding this operational guidance plan by April 16, 1993, and final approval of the plan as soon as possible to facilitate resolution of environmental compliance issues. This Management Plan has been faxed to your other agency representatives for their review.

If you have any questions regarding these issues, please contact me at 966-5918, or Mark Van Der Puy at 966-2473.

Sincerely,


James K. Hartman
Assistant Manager for Transition
and Environmental Restoration

Enclosure

cc w Enc.
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N Castañeda, ER, RFO
J Dion, WMED, RFO
T De Mass, ER, EG&G
H Ainscough, CDH
J Schieffelin, CDH
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D Ward, GC, EG&G
L Smith, EM-60
A Rampertaap, EM-453, HQ
J. Ciocco, EM-453, HQ

DRAFT

INTERIM POND WATER MANAGEMENT PLAN

(Revised March 23, 1993)

Landfill Pond

Maximum Elevation	5921 0 feet	7 52 Mgal	100%
Action Level	5920 0 feet	6 65 Mgal	88 4%
Normal Operational Range	5917 0 feet	4.51 Mgal	60%
	5912.5 feet	2.26 Mgal	30%

Normal Operations.

Normal operation for the Landfill Pond is to spray evaporate the water over the pond. The option exists to transfer the water to Ponds A-1 and A-2 for spray evaporation.

Spray evaporation operations will be conducted during daylight hours and will not be conducted during inclement weather (humidity greater than 80% for prolonged periods, sustained wind speed in excess of 30 mph, and/or air temperatures less than 35° F)

Sampling.

Prior to initiation of transfer or spray evaporation, the Landfill Pond will be sampled and analyzed for HSL metals, volatile organics, semi-volatile organics, gross alpha and gross beta, pH, and nitrates. During extended periods of transfer or spray evaporation activities, water samples will be taken quarterly (approximately June and September)

Operational Guidance.

Operational decisions will be based on comparing the analytical data to Segment 5 stream standards.

If the pond water meets Segment 5 stream standards for the parameters analyzed, the water may be spray evaporated or the water may be transferred to Ponds A-1 and A-2.

If the pond water does not meet Segment 5 stream standards, treatment options will be identified and evaluated to reduce the contaminant concentrations prior to spray evaporation or transfer to Pond A-1 or A-2. The use of optional treatment technologies will be further evaluated in the IM/IRA. It may not be possible to initiate treatment prior to implementation of the IM/IRA

Emergency Operations:

Landfill Pond water may be transferred to Ponds A-1 and A-2 regardless of compliance with Segment 5 stream standards if, and only if each of the following conditions exist

(1) the water elevation is within one foot of spillway (Action Level), and

(2) further storms are predicted or other factors prohibit spray evaporation.

Notification:

Prior to routine transfers or spray evaporation operations, EG&G will submit a written request and obtain approval from DOE/RFO and DOE/RFO will notify CDH and/or EPA

Concurrent with actions taken to mitigate conditions outlined under the emergency operations of the landfill pond, EG&G will notify DOE/RFO and DOE/RFO will notify CDH and/or EPA

For 1993 Season.

EG&G anticipates one transfer of approximately 1 million gallons to Ponds A-1 and A-2 in the spring.

EG&G will spray evaporate approximately 2 million gallons of water from April through October.

Ponds A-1 and A-2

Pond A-1

Maximum Elevation	5829.1 feet	1.40 Mgal	100%
Action Level	5828.6 feet	1.24 Mgal	88.6%
Normal Operational Range	5827.3 feet	0.84 Mgal	60%
	5825.9 feet	0.42 Mgal	30%

Pond A-2

Maximum Elevation	5816.9 feet	6.03 Mgal	100%
Action Level	5815.9 feet	5.21 Mgal	86.4%
Normal Operational Range	5813.7 feet	3.62 Mgal	60%
	5810.4 feet	1.81 Mgal	30%

Normal Operations:

Normal operation for Ponds A-1 and A-2 is to transfer Pond A-1 to Pond A-2 and spray evaporate Pond A-2.

Spray evaporation operations will be conducted during daylight hours and will not be conducted during inclement weather (humidity greater than 80% for prolonged periods, sustained wind speed in excess of 30 mph, and/or air temperatures less than 35° F) or after containment of a spill in one of the ponds.

Sampling:

Prior to initiation of transfer or spray evaporation, the pond will be sampled and analyzed for HSL metals, volatile organics, semi-volatile organics, gross alpha and gross beta, pH, and nitrates. During extended periods of transfer or spray evaporation activities, water samples will be taken quarterly (approximately June and September).

Operational Guidance:

Operational decisions will be based on comparing the analytical data to Segment 5 stream standards.

If the pond water meets Segment 5 stream standards for the parameters analyzed, the water may be spray evaporated or the water may be transferred between Ponds A-1 and A-2.

If the pond water does not meet Segment 5 stream standards, treatment options will be identified and evaluated to reduce the contaminant concentrations prior to spray.

evaporation or transfer between Ponds A-1 or A-2. The use of optional treatment technologies will be further evaluated in the IM/IRA. It may not be possible to initiate treatment prior to implementation of the IM/IRA.

Emergency Operations:

Pond A-1 may be transferred to Pond A-2 or Pond A-2 may be transferred to Pond A-1, regardless of compliance with Segment 5 stream standards, if each of the following conditions exist:

- (1) Pond A-1 water elevation is within 1/2 foot of the spillway and/or Pond A-2 water elevation is within one foot of the drop structure (Action Levels), and
- (2) further storms are predicted or other factors prohibit spray evaporation.

Notification.

Prior to routine transfers or spray evaporation operations, EG&G will submit a written request and obtain approval from DOE/RFO and DOE/RFO will notify CDH and/or EPA.

Concurrent with actions taken to mitigate conditions outlined under the emergency operations of Pond A-1 and A-2, EG&G will notify DOE/RFO and DOE/RFO will notify CDH and/or EPA.

Concurrent with actions taken to contain a potential spill routed to Pond A-1 or A-2, EG&G will notify DOE/RFO and DOE/RFO will notify CDH and/or EPA

For 1993 Season.

EG&G will spray evaporate approximately 2 million gallons of water from April through October

Ponds B-1 and B-2

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Pond B-1

Maximum Elevation	5879.6 feet	0.53 Mgal	100%
Action Level	5879.1 feet	0.43 Mgal	81.1%
Normal Operational Range	5878.5 feet	0.33 Mgal	60%
	5877.5 feet	0.17 Mgal	30%

Pond B-2

Maximum Elevation	5868.9 feet	1.56 Mgal	100%
Action Level	5867.9 feet	1.25 Mgal	80.1%
Normal Operational Range	5866.8 feet	0.94 Mgal	60%
	5864.6 feet	0.47 Mgal	30%

Normal Operations:

Normal operation for Ponds B-1 and B-2 is to transfer Pond B-1 to Pond B-2 and then transfer Pond B-2 to Pond A-2 for spray evaporation.

Spray evaporation operations will be conducted during daylight hours and will not be conducted during inclement weather (humidity greater than 80% for prolonged periods, sustained wind speed in excess of 30 mph, and/or air temperatures less than 35°F) or after containment of a spill in one of the ponds.

Sampling.

Prior to initiation of transfer or spray evaporation, the pond will be sampled and analyzed for HSL metals, volatile organics, semi-volatile organics, gross alpha and gross beta, pH, and nitrates. During extended periods of transfer or spray evaporation activities, water samples will be taken quarterly (approximately June and September).

Operational Guidance:

Operational decisions will be based on comparing the analytical data to Segment 5 stream standards.

If the pond water meets Segment 5 stream standards for the parameters analyzed, the water may be spray evaporated at Pond B-2 or the water may be transferred to Pond A-2 and spray evaporated. Spray evaporation capabilities do not currently exist at Pond B-2, but are being evaluated.

If the pond water does not meet Segment 5 stream standards, treatment options will be identified and evaluated to reduce the contaminant concentrations prior to spray.

evaporation or transfer to Pond A-2. The use of optional treatment technologies will be further evaluated in the IM/IRA. It may not be possible to initiate treatment prior to implementation of the IM/IRA.

Emergency Operations.

Pond B-1 may be transferred to Pond B-2 and then Pond B-2 may be transferred to Pond A-2, regardless of compliance with Segment 5 stream standards, if each of the following conditions exist.

(1) Pond B-1 water elevation is within 1/2 foot of the drop structure and/or Pond B-2 water elevation is within one foot of the drop structure (Action Levels), and

(2) further storms are predicted or other factors prohibit spray evaporation

Notification.

Prior to routine transfers or spray evaporation operations, EG&G will submit written requests and obtain approval from DOE/RFO and DOE/RFO will notify CDH and/or EPA.

Concurrent with actions taken to mitigate conditions as outlined under the emergency operations of Pond B-1 and B-2, EG&G will notify DOE/RFO and DOE/RFO will notify CDH and/or EPA.

Concurrent with actions taken to contain a potential spill routed to Pond B-1 or B-2, EG&G will notify DOE/RFO and DOE/RFO will notify CDH and/or EPA.

For 1993 Season.

EG&G will conduct two transfers of approximately 0.3 million gallons to Pond A-2 (spring and fall). The water will be spray evaporated at Pond A-2 from April through October.

Ponds A-3, B-5, and A-4

Pond A-3

Maximum Elevation	5793 0 feet	12 4 Mgal	100%
Normal Operational Range	5788 1 feet	6 2 Mgal	50%
	5781 5 feet	1.2 Mgal	10%

Pond B-5

Maximum Elevation	5803 9 feet	24.0 Mgal	100%
Normal Operational Range	5796.5 feet	12.0 Mgal	50%
	5785 8 feet	2.4 Mgal	10%

Pond A-4

Maximum Elevation	5757 9 feet	32 5 Mgal	100%
Normal Operational Range	5753 3 feet	21 1 Mgal	65%
	5741 0 feet	3.3 Mgal	10%

Normal Operations.

Transfer of Pond B-5 and discharge of Pond A-3 to Pond A-4 are initiated when their volumes approach 50%

Pond A-4 will be maintained near 50% and will not exceed 65%

Transfer and discharge to Pond A-4 will be discontinued prior to a pre-discharge sampling event with CDH

If the transfer/discharge of water into Pond A-4 would cause its level to exceed 65%, Pond B-5 and/or Pond A-3 may be transferred to Pond A-4 during its discharge.

After completion of a Pond A-4 discharge, the cycle will be re-initiated. A discharge cycle requires approximately 6 weeks to complete.

Sampling:

Prior to discharge, a pre-discharge sampling event will be conducted with CDH. The pond will be sampled to ensure compliance with the Segment 4 stream standards

Operational Guidance:

Pond A-4 water meeting Segment 4 stream standards will be discharged without treatment

Pond A-4 water not meeting Segment 4 stream standards may be treated using available GAC units, as appropriate, and recirculated to Pond A-4 until analysis indicates compliance with Segment 4 stream standards

Emergency Operations:

Emergency operations will be consistent with the RFP procedure, Water Detention Pond Dam Failure, 1-15200-EPIP-12.14

Notification:

After analytical results have been reviewed, EG&G will submit a written request and obtain approval to discharge Pond A-4 from DOE/RFO and DOE/RFO will receive concurrence from CDH and/or EPA.

For the 1993 season.

EG&G will complete transfer/discharge cycles about every 6 weeks, with approximately 16 million gallons of water discharged offsite during each cycle

During high precipitation periods (spring runoff) Pond B-5 and/or Pond A-3 may have to be transferred to Pond A-4 while the Pond A-4 is being discharged.

Pond C-2

Maximum Elevation	5765.3 feet	22.8 Mgal	100%
Normal Operational Range	5760.3 feet	11.4 Mgal	50%
	5753.5 feet	2.3 Mgal	10%

Normal Operations:

Normally, discharge of Pond C-2 will be initiated when its volume approaches 50%.

Pond C-2 is discharged via pipeline to the Broomfield Diversion Ditch.

Sampling:

Prior to discharge, a pre-discharge sampling event will be conducted with CDH. The pond will be sampled to ensure compliance with the Segment 4 stream standards.

Operational Guidance:

Pond C-2 water meeting Segment 4 stream standards will be discharged without treatment.

Pond C-2 water not meeting Segment 4 stream standards may be treated using available GAC units, as appropriate, and recirculated to Pond C-2 until analysis indicates compliance with Segment 4 stream standards.

Emergency Operations:

Emergency discharges will be consistent with the RFP procedure, Water Detention Pond Dam Failure, 1-15200-EPIP-12.14

Notification:

After analytical results have been reviewed, EG&G will submit a written request and obtain approval to discharge Pond C-2 from DOE/RFO and DOE/RFO will receive concurrence from CDH and/or EPA.

For the 1993 season:

EG&G anticipates that only one discharge will be required after the spring runoff events. The volume discharged offsite should be approximately 12 million gallons.

Depending on the number and intensity of storm events in the spring, summer, and fall, additional discharge events may be required.

HISTORICAL DATA SUMMARY OF MAXIMUM VALUES OF CONSTITUENTS

AT LANDFILL POND

TABLE 1

<u>PARAMETER</u>	<u>SW097 (1)</u>	<u>SW098 (2)</u>
BOD (mg/l)	N/A	1.8
COD (mg/l)	N/A	96
TOC (mg/l)	N/A	27
Ammonia as N (mg/l)	N/A	<0.03
TSS (mg/l)	4900	731
pH (s.u.)	N/A	8.83
Nitrate-Nitrite(as N) (mg/l)	0.0617 *	<0.02
Gross alpha (pCi/l)	11.1 *	2
Gross beta (pCi/l)	19.9 *	12
<u>Volatile organics detected</u>		
Chloroform (ug/l)	N/A	7
Methylene chloride (ug/l)	10	10
Toluene (ug/l)	N/A	3
2,4-Dimethylphenol(ug/l)	3.5 *	ND
2-Methylnaphthalene(ug/l)	12 *	ND
4-Methylphenol(ug/l)	16.5 *	ND
Acenaphthene (ug/l)	1.5 *	ND
Benzoic Acid (ug/l)	15.5 *	ND
Benzyl Alcohol (ug/l)	3.5 *	ND
Bis(2-ethylhexyl)phthalate (ug/l)	3 *	1
Butyl Benzyl Phthalate (ug/l)	3 *	0.5
Di-n-Butyl Phthalate (ug/l)	4.5 *	ND
Diethyl Phthalate (ug/l)	1 *	ND
Fluorene (ug/l)	-	ND
Naphthalene (ug/l)	1 *	ND
Phenanthrene (ug/l)	0.5 *	ND
Acetone (ug/l)	14	ND
Ethylbenzene (ug/l)	19	ND
Toluene (ug/l)	79	ND
Xylene (ug/l)	20	ND
1,1-Dichloroethane (ug/l)	9	ND

(1) SW097 - Sampling point at west end of landfill pond near the inflow of leachate.

* 1989 mean concentration (maximum values not available).

All other values are maximum values from 1990 and 1991 samples.

(2) SW098 - Sampling point at east end of landfill pond. All values shown are the maximum concentrations observed in 1991.

N/A - not available

ND - not detected

TABLE II - IDENTIFIED CONTAMINANTS OF CONCERN FROM HISTORICAL DATA
JAN 1991 - NOV 1991 POND ANALYSIS

CHEMICAL CLASSIFICATION	POND A-1 ANALYTES DETECTED	POND A-2 ANALYTES DETECTED	POND B-1 ANALYTES DETECTED	POND B-2 ANALYTES DETECTED
VOLATILES	Acetone		Acetone	Acetone
			Acetone	1,2-Dichloroethane
				1,1,1-Trichloroethane
				TCE
SEMI-VOLATILES		Bis(2-ethylhexyl)phthalate		
METHOD 502.2	1,2,4 Trimethylbenzene	1,2,3 Trichlorobenzene	Chloroform	1,1,1 Trichloroethane
	Hexachlorobutadiene	1,2,4 Trichlorobenzene	1,1,1-Trichloroethane	1,2,4 Trichlorobenzene
	1,1,1-Trichloroethane	Dichlorodifluoromethane	FOE	Carbon Tetrachloride
	FOE	FOE	TCE	Chloroform
	n-Butylbenzene	TCE		FOE
		Cis-1,3 propylene		Toluene
				TCE
				Vinyl Chloride
				Cis-1,2 Dichloroethane
				Trans-1,2 Dichloroethane
TRIAZINES	Atrazine	Atrazine	Atrazine	
PAH METHOD 610			Fluorene	

SHADED AREA INDICATES THAT THE ANALYTE IS ABOVE SEGMENT 5 STREAM STANDARD

TABLE III

SEGMENT 5 STANDARDS ADOPTED BY THE CWOCC FEBRUARY 1, 1993

PARAMETER		Seg 5 Std.	PQL	Seg 4 Std.	LDR
ORGANICS	notes			(diff from 5)	
ACENAP-T-ENE	-	520	.0		59
ACENAP-T-YLENE		0 0028	10		
ACFOLEIN		2	.0		none
ACRYLONITRILE		0 058	5		290
ALDICARB	1	10			
ALDRIN	3	0 00013	0 1		240
ANTHRACENE	6,7	0 0028	1 0		59
ATRAZINE		3 0	0 5		none
BENZENE	1	1	1 0		140
BENZIDINE		0 00012	10		
BENZO (a) ANTHRACENE		0 0028	10		59
BENZO (a) PYRENE		0 0028	10		6
BENZO (b) FLUORANTHENE		0 0028	10		55
BENZO (ghi) PERYLENE		0 0028	10		5 5
BENZO (k) FLUORANTHENE		0 0028	10		59
BROMODICHLOROMETHANE	6	0 3	1 0		350
BROMOFORM	6	4	1 0		630
BUTYL BENZYL PHTHALATE	1	3000	10		17
CARBOFURAN	1	36			
CARBON TETRACFLORIDE	2	18	1 0	0 25	57
C-LOROETHYL ETHER (BIS-2)		0 03	10		33
C-LORDANE	3	0 00058	1 0		3 3
C-LOROBENZENE	1	100	1 0		57
C-LOROFORM	3,6	6 0	1 0		46
C-LOROISOPROPYL ETHER	1	1400	10		55
4-CHLORO-3-METHYLPHENOL	1	30	50		
C-LOPOMETHYL ETHER (BIS)		0 0000037	10		
C-LOROPHENOL		2000	50		44
CHLOROPYRIFOS	1	0 041	0 1		
CHRYSENE		0 0028	10		59
DDD 4'4	1	0 00083	0 1		23
DDE 4'4	1	0.001	0 1		31
DDT 4'4	3	0 00059	0 1		3 9
DEMETON		0 1	1 0		
DI-N-BUTYL PHTHALATE	1	2700	10		
DIBENZO (a, h) ANTHRACENE		0 0028	10		55
DIBROMOCHLOROMETHANE	6	6	1 0		
DICHLOROBENZENE 1,2	1	620	1.0		36
DICHLOROBENZENE 1,3	1	400	1 0		88
DICHLOROBENZENE 1,4	1	75	1 0		90
DICHLOROBENZIDINE	3	0 039	10		
DICHLOROETHANE 1,2	1	0 4	1 0		210
DICHLOROETHYLENE 1,1	1	0 057	1 0		25
DICHLOROETHYLENE 1,2-cis	1	70	1 0		

SEGMENT 5 STANDARDS ADOPTED BY THE CWQCC FEBRUARY 1, 1993

PARAMETER		Seg 5 Std.	PQL	Seg 4 Std.	LDR
DICHLOROETHYLENE 1,2-diols	1	.00	.01		54
DICHLOROPHENOL 2,4	1	2	50		44
DICHLOROPHENOXYACETIC ACID (2,4-D)		70	.01		20
DICHLOROPROPANE 1,2	1	0.56	.01		250
DICHLOROPROPYLENE 1,3-diols	1	10	.01		
DIELDRIN	3	0.00014	0.1		17
DIETHYL PHTHALATE	1	23000	10		200
DIMETHYL PHTHALATE	1	313000	10		47
DIMETHYLPHENOL 2,4	1	2120	50		36
DINITRO-O-CRESOL	1	13	50		280
DINITROPHENOL 2,4	1	14	50		120
DINITROTOLUENE 2,4	1	0.11	10		320
DINITROTOLUENE 2,6	1	230	10		550
DIOXIN (2,3,7,8-TCDD)	9	0.000000013	0.01		
DIPHENYLHYDRAZINE 1,2	1	0.04	20		87
ENDOSULFAN	4	0.056	0.1		23
ENDOSULFAN SULFATE	1	0.93	0.1		29
ENDRIN		0.0023	0.1		2.8
ENDRIN ALDEHYDE	1	0.2	0.1		25
ETHYLBENZENE	1	680	1.0		57
ETHYLBENZYL PHTHALATE (BIS-2)	1	1.8	10		280
FLUORANTHENE		42	10		68
FLUORENE		0.0028	10		59
GUTHION		0.01	1.5		
HEPTACHLOR		0.00021	0.05		1.2
HEPTACHLOR EPOXIDE	1	0.0001	0.05		16
HEXACHLOROBENZENE		0.00072	10		55
HEXACHLOROBUTADIENE		0.45	10		55
HEXACHLOROCYCLOHEXANE, ALPHA (BHC)		0.0039	0.05		
HEXACHLOROCYCLOHEXANE, BETA (BHC)		0.014	0.05		
HEXACHLOROCYCLOHEXANE, GAMMA (BHC)		0.019	0.05		
HEXACHLOROCYCLOHEXANE, TECHNIC	8	0.012	0.2		
HEXACHLOROPENTADIENE	1	5	10		
HEXACHLOROETHANE		1.9	10		55
INDENO(1,2,3-cd)PYRENE		0.0028	10		5.5
ISOPFORONE	1	8.4	10		
MALATHION		0.1	0.2		
METHOXYCHLOR		0.03	0.5		250
METHYL BROMIDE		48	1.0		
METHYL CHLORIDE		5.7	1.0		
METHYLENE CHLORIDE	6	4.7	1.0		89
MIREX		0.001	0.1		
NAPHTHALENE		0.0028	10		59
NITROBENZENE	1	3.5	10		68
NITROSO-DI-N-PROPYLAMINE-N	1	0.005	10		
NITROSODI-N-BUTYLAMINE-N	8	0.0064	10		400

SEGMENT 5 STANDARDS ADOPTED BY THE CWQCC FEBRUARY 1, 1993

[illegible]

SEGMENT 5 STANDARDS ADOPTED BY THE CWQCC FEBRUARY 1, 1993

PARAMETER		Seg 5 Std.	PQL	Seg 4 Std.	LDR
METALS	notes				
ALUMINUM	-	57 (d)		TVS	
ANTIMONY	1	141			1900
ARSENIC	-	50			1400
BARIUM	1	1000 0			1200
BERYLLIUM	1	4			820
CADMIUM	1	TVS = 1 50			200
CHROMIUM III	1	50			
CHROMIUM VI	1	11 (d)			TOTAL 370
COPPER	2	23		TVS	1300
IRON (d)	1	300			
IRON	2	13200 0		TVS	
LEAD	2	28		TVS	280
MANGANESE (d)	2	560		TVS	
MANGANESE	1	1000 0		TVS	
MERCURY	1	0 01			150
NICKEL	1	TVS= 125			550
SELENIUM	1	10			820
SILVER	1	TVS= 0 59			290
THALLIUM	1	0 012		TVS	1400
ZINC	2	350			1000
PHYSICAL & BIOLOGICAL	notes				
MINIMUM DISSOLVED OXYGEN	1	5 0			
pH (s u)	1	6 5 -9 0			
FECAL COLIFORM/100 ML	1	2000			
INORGANICS	notes				
UNIONIZED AMMONIA - March through Jun		1800		TVS	
UNIONIZED AMMONIA - July through Feb		700		TVS	
ASBESTOS	1	80,000 fibers/l			
BORON	1	750			
CHLORIDE	1	250000			
CHLORINE (CHRONIC)	1	11			
CYANIDE (FREE)	1	5		TVS	TOTAL 1200
FLUORIDE	1	2000 0			35000
SULFIDE (AS H ₂ S)	1	2			14000
NITRATE	1	10000		TVS	14000
NITRITE	1	500		TVS	
SULFATE	1	250000			
ac=acute, d=dissolved					
All units in µg/l except as noted					
All metals are total recoverable, chronic unless noted otherwise					
TVS=Table Value Standard based on an average sitewide hardness of 143 mg/l					
Most restrictive standard is shown					

SEGMENT 5 STANDARDS ADOPTED BY THE CWQCC FEBRUARY 1, 1993

PARAMETER	Seg 5 Std.	PQL	Seg 4 Std.	LDR
1=Underlying segment standards				
2=CWQCC temporary modifications				
ACETONE				280
ACENAPHTHYLENE				59
ACETONITRILE				170
ACETOPHENONE				10
2-ACETYLAMINOFLUORENE				59
4-AMINOBIIPHENYL				130
ANILINE				810
ARAMITE				360
AROCLOR 1016				13
AROCLOR 1221				14
AROCLOR 1232				13
AROCLOR 1242				17
AROCLOR 1248				13
AROCLOR 1254				14
AROCLOR 1260				14
alpha-BHC				0 14
beta-BHC				0 14
delta-BHC				23
gamma-BHC				1 7
BROMOMETHANE				110
4-BROMOPHENYL PHENYL ETHER				55
n-BUTYL ALCOHOL				5600
2-SEC-BUTYL-4,6-DINITROPHENOL				66
CARBON DISULFIDE				14
P-CHLOROANILINE				460
C-LOBOENZILATE				100
2-CHLORO-1,3-BUTADIENE				57
CHLORODIBROMOMETHANE				57
CHLOROETHANE				270
BIS (2-CHLOROETHOXYL) METHANE				36
P-CHLORO-M-CRESOL				18
CHLOROMETHANE (METHYL CHLORIDE)				190
2-CHLORONAPHTHALENE				55
3-CHLOROPROPYLENE				36
O-CRESOL				110
CRESOL (M- AND P- ISOMERS)				770
CYCLOHEXANONE				360
1,2-DIBROMO-3-CHLOROPROPANE				1.0
1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)				28
DIBROMOMETHANE				110
DIBENSO (A,E) PYRENE				61
DICHLORODIFLUOROMETHANE				230
1,1-DICHLOROETHANE				59

SEGMENT 5 STANDARDS ADOPTED BY THE CWOCC FEBRUARY 1, 1993

PARAMETER	Seg 5 Std.	PQL	Seg 4 Std.	LDR
CIS-1,3-DICHLOROPROPENE				36
TRANS-1,3-DICHLOROPROPENE				36
DI-N-OCTYL PHTHALATE				17
DI-N-PROPYLNITROSOAMINE				400
DIPHENYLAMINE				520
DIPHENYL NITROSOAMINE				400
1,4-DIOXANE				120
DISULFOTON				17
ETHYL ACETATE				340
ETHYL CYANIDE				240
ETHYL ETHER				120
FAMPHUR				17
FLUOROTRICHLOROMETHANE				20
HEXACHLOROCYCLOPENTADIENE				57
HEXACHLORODIBENZOFURANS				0 063
HEXACHLORODIBENSO-P-DIOXINS				0 063
IODOMETHANE				190
ISOBUTANOL				5600
ISODRIN				21
ISAFROLE				81
KEPONE				1 1
METHACRYLONITRILE				240
METHANOL				5600
METHADYPYLENE				81
3OMETHYLCYCLOANTHRENE				5 5
4,4-METHYLENE-BIS-(2-CHLOROANILINE)				500
METHYL ETHYL KETONE				280
METHYL ISOBUTYL KETONE				140
METHYL METHACRYLATE				140
METHYL METANSULFONATE				18
METHYL PARATHION				14
2-NAPHTHYLAMINE				520
P-NITORANILINE				28
5-NITRO-O-TOLUIDINE				320
4-NITROPHENOL				120
N-NITROSOMETHYL-ETHYLAMINE				400
N-NITROSOMORPHOLINE				400
N-NITROPIPERIDINE				13
PENTACHLORODIBENZO-P-DIOXINS				0 063
PENTACHLORONITROBENZENE				55
PHENACETIN				81
PHORATE				21
PTHALIC ANHYDRIDE				69
PRONAMIDE				93
PYRIDINE				14
SAFROLE				81

SEGMENT 5 STANDARDS ADOPTED BY THE CWQCC FEBRUARY 1, 1993

PARAMETER	Seg 5 Std.	PQL	Seg 4 Std.	LDR
SILVEX (2,4,5-TP)				720
2,4,5-T				720
TETRACHLORODIBENZOFURANS				0.063
TETRACHLORODIBENZO-P-DIOXINS				0.063
1,1,1,2-TETRACHLOROETHANE				57
TETRACHLOROETHYLENE				56
2,3,4,6-TETRACHLOROPHENOL				30
1,2,4-TRICHLOROBENZENE				55
2,4,5-TRICHLOROPHENOL				180
1,2,3-TRICHLOROPROPANE				850
1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE				57
TRIS (2,3-DIBROMOPROPYL) PHOSPHATE				110
XYLENE				320
VANADIUM				42